

INTERNATIONAL PRELIMINARY EXAMINATION REPORT  
(PCT Article 36 and Rule 70)



Rec'd PCT/PTO 03 SEP 2004

REC'D 29 OCT 2003

WIPO PCT

Applicant's or agent's file reference 100086	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/US03/06717	International filing date (day/month/year) 05.03.2003	Priority date (day/month/year) 05.03.2002
International Patent Classification (IPC) or both national classification and IPC C09G1/02		
Applicant CABOT MICROELECTRONICS CORPORATION et al.		

1.	This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2.	This REPORT consists of a total of 5 sheets, including this cover sheet.  <input type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  These annexes consist of a total of sheets.
3.	This report contains indications relating to the following items:  I <input checked="" type="checkbox"/> Basis of the opinion II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application

Date of submission of the demand  04.09.2003	Date of completion of this report  28.10.2003
Name and mailing address of the International preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer  Gerber, M  Telephone No. +49 89 2399-8528  

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. **PCT/US03/06717**

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17):*

**Description, Pages**

1-13 as originally filed

**Claims, Numbers**

1-17 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. **PCT/US03/06717**

---

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes: Claims	1-17
	No: Claims	
Inventive step (IS)	Yes: Claims	1-17
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-17
	No: Claims	

**2. Citations and explanations**

**see separate sheet**

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/US03/06717

**Re Item V**

**Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

Reference is made to the following documents:

- D1:** US-B1-6 190 237 (KRISHNAN MAHADEVAIYER ET AL) 20 February 2001
- D2:** WO 01 52618 A (BOHM GEORG ;COLE WILLIAM (US); NAIK SANJEEV (US); BRIDGESTONE CORP) 26 July 2001
- D3:** US 2001/013506 A1 (MACDONALD MICHAEL J ET AL) 16 August 2001, cited in the application
- D4:** EP-A-1 150 341 (HITACHI CHEMICAL CO LTD ;HITACHI LTD (JP)) 31 October 2001, cited in the application

**Remark:** The feature of **claims 5, 8 and 14-17** are not referred to in the description. These claims are therefore not supported by the description as required by Article 6 PCT.

**1. Novelty**

D1, which is considered to represent the most relevant state of the art, discloses polishing compositions comprising abrasive particles and an organic diluent, having a pH of 1 to 6 (see column 4, line 1). Silica constitutes one possibility for the abrasive particles and methanol can be used as organic diluent (see column 3, lines 39-50).

Choosing one single alternative from two lists of possibilities for the two components of the polishing composition in D1 does not anticipate the claimed subject-matter. Furthermore, there is no indication in D1 that draws the attention of the skilled person to this combination.

The subject-matter of **claims 1-17** is therefore novel over the available state of the art (Article 33(2) PCT).

**2. Inventive step**

The problem to be solved by the present invention may therefore be regarded as to provide a silica abrasive-based polishing composition with colloidal stability under acidic

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

---

International application No. PCT/US03/06717

conditions.

There is no hint in D1 taken alone or in combination with the other cited documents to use methanol as an organic diluent under acidic conditions to improve the colloidal stability of the abrasive-based polishing composition.

Moreover, the Applicant has proved by means of comparative tests that the fact of adding methanol as an organic diluent allows to obtain silica abrasive-based polishing compositions with colloidal stability under acidic conditions which are better than polishing compositions containing no additive or containing ethanol, trimethylammonium hydroxide, ammonia or aluminium nitrate, as evidenced by the volume of sedimentation.

The subject-matter of **claims 1-17** is therefore considered inventive (Article 33(3) PCT).

**3. Industrial applicability**

The subject-matter of present **claims 1-17** appears to comply with the requirements of industrial applicability as stipulated in Article 33(4) PCT.